Nutrition Reviews

VOLUME 34 NUMBERS 1-12

January–December 1976

Published by
THE NUTRITION FOUNDATION, INC.
489 FIFTH AVENUE NEW YORK, N.Y. 10017

Copyright, 1976, Nutrition Foundation, Inc., New York, N.Y., U.S.A.

Editor
D. M. Hegsted, Ph.D., Professor of Nutrition
Schools of Medicine and Public Health
Harvard University, Boston

Associate Editor
Elmer H. Stotz, Ph.D.
University of Rochester

Assistant Editor
Robin Holab

Production Manager
Marilyn K. Pliska

Contributing Editors

G. A. O. Alleyne, M.D.
University of the West Indies

Eric G. Ball, Ph.D.
Marine Biological Laboratory, Woods Hole

Mahtab S. Bamji, Ph.D.
National Institute of Nutrition, India

G. E. Bunce, Ph.D.
Virginia Polytechnic Institute and State University

R. K. Chandra, M.D.
Memorial University at Newfoundland

Halvor N. Christensen, Ph.D.
University of Michigan

Helene Delisle-Mendegris, Ph.D.
Grenoble, France

Richard M. Forbes, Ph.D.
University of Illinois

Charles H. Halsted, M.D.
University of California

Frank L. Iber, M.D.
University of Maryland

Kamala S. Jaya Rao, M.D.
National Institute of Nutrition, India

Donald B. McCormick, Ph.D.
Cornell University

Robert B. McGandy, M.D.
Harvard School of Public Health

R. D. G. Milner, M.D., Ph.D.
The Children's Hospital, Sheffield

Robert A. Neal, Ph.D.
Vanderbilt University

Ralph A. Nelson, M.D., Ph.D.
The Mayo Clinic

James I. Shaw, Ph.D.
Harvard School of Dental Medicine

D. A. T. Southgate, Ph.D.
University of Cambridge

Steven R. Tannenbaum, Ph.D.
Massachusetts Institute of Technology

Carol I. Waslien, Ph.D.
Auburn University

Mary Ann Williams, Ph.D.
University of California

Benjamin J. Wilson, Ph.D.
Vanderbilt University

INFORMATION FOR SUBSCRIBERS

Subscriptions should be sent to The Nutrition Foundation, Inc., 888 Seventeenth St., N.W., Washington, D.C. 20006. Rate: $12.00 per year in the United States and other countries. A student rate of $6.00 for the year 1977 is offered to regularly matriculated students in colleges or universities whose subscription application is accompanied by an affirmation of student status signed by an authorized Department representative. Changes of address should be sent to The Nutrition Foundation. In the U.S., ZIP CODES must be included.

Note: Items may be quoted from NUTRITION REVIEWS without special permission. If quotations are made, the editors ask only that credit be given to NUTRITION REVIEWS and that they be made in such a way that the original meaning of the review is preserved.

The publication of NUTRITION REVIEWS has been undertaken to enable professionally trained people to keep abreast of current progress, and to have available an unbiased, authoritative review of the current research literature in the science of nutrition.

The Editorial Staff has been carefully selected so that the publication will merit, in reasonable degree, the confidence of the medical profession and others who work directly with the public in the field of nutrition. The service provided by the publication is distinct from that of an abstract journal, a review for laymen, or an extensive scientific review. Since the reviews as originally prepared by a member of the Editorial Staff are frequently modified by special referees and may be further modified by the Editorial Office in preparing final copy for the press, the Editorial Committee feels that it is preferable not to affix the names of Editorial Staff members to individual reviews. There is thus a high degree of group responsibility on the part of the Editor and Associate Editors.

Signed articles do not necessarily represent the opinion of the Editorial Staff.

CONTENTS OF VOLUME 34

NO. 1, JANUARY 1976

Nutrition Science: An Overview of American Genius, W. O. Atwater Memorial Lecture, by William J. Darby 1
Requirement of Vitamin B_6 During Pregnancy 15
Potassium Depletion and Impaired Insulin Release in Protein-Energy Malnutrition 16
Magnesium Oxide-Pyridoxine Therapy for Recurrent Urolithiasis 18
Chenodeoxycholic Acid in the Dissolution of Gallstones 20
Dietary Substitution of Essential Amino Acids by Their α-Keto and α-Hydroxy Analogues 22
Impairment of Mitochondrial Fatty Acid Oxidation by Chronic Ethanol Ingestion 23
The Relation of Iron to Blood Platelets 25
Tryptophan Catabolism by Liver Tryptophan Pyrrolase 27
Mass-Action Effects Are Indispensable for All the Amino Acids 30
Chemical Preservatives for Prevention of Mycotoxin Production 31
Announcements of Meetings, Courses 32

NO. 2, FEBRUARY 1976

Milk Intolerances, by Calvin W. Woodruff 33
Weight Gain During Hyperalimentation 38
In What Form Does Vitamin B_6 Exist in Plasma? 40
Keto Analogues of Essential Amino Acids in Treatment of Human Diseases 41
The Herbs and the Heart 43
Epidemic of Hepatitis in Man Due to Aflatoxicosis 45
Margaret Cammack Smith, Edith Lantz and Howard V. Smith: "The Cause of Mottled Enamel" 47
Lipid Peroxidation and Glutathione Peroxidase in the Liver of Cholesterol-Fed Rats 50
Protein Deprivation, Refeeding and Ammonia Intoxication 52
Diet, Exercise and Ketone Metabolism 54
Sulfites as Food Additives 58
First International Congress on Engineering and Food 63
Japanese International Biological Program 63
Meeting Announcements 64
Recent Books 64

NO. 3, MARCH 1976

Nutrition: Toxicology and Pharmacology, by John N. Hathcock 65
MCT Absorption by Preterm Infants 71
Folic Acid, Ethanol and Jejunal Glycolysis 73
Intervention in Type II Disease in Children 75
Riboflavin Deficiency, Galactose Metabolism and Cataract 77
Mucosal Immunity in Malnutrition 79
W. A. Waugh and C. G. King: "Isolation and Identification of Vitamin C" 81
Zinc Deficiency in Pregnant, Fetal and Young Rats 84
Protein Deficiency over Generations in Rats 86
Cholesterol Feeding Affects Microsomal Metabolism of Steroids 88
Total Parenteral Nutrition 90
Vitamin C and Charles Glen King 94
Announcement of Appointment 94

Diet, Nutrition and Cancer Program of the National Cancer Institute 95
Appeal for Help 95
Recent Books 96
Nutrition References and Book Reviews 96

NO. 4, APRIL 1976

Careers in Nutrition from the Clinical Viewpoint, by George L. Blackburn and Bruce R. Bistrian 97
Effect of High Intake of Leucine on Urinary Tryptophan and Niacin Metabolites 105
Small Intestine, Stress and Adaptation 107
Enhanced Efficiency in Uremia in Re-Use of Urea N for Serum Albumin Synthesis 110
Neonatal Calcium Homeostasis, Vitamin D and Parathyroid Function 112
H. Trendley Dean, P. Jay, F. A. Arnold, Jr. and E. Elvove: "Domestic Water and Dental Caries" 116
The Transport of Vitamin A in Hypervitaminosis A 119
Processed Protein Foods and Lysinoalanine 120
Evidence for the Occurrence of γ-Carboxyglutamate in Mineralized Tissue Proteins 122
Alcohol-Induced Hepatic Necrosis 124
Letter to the Editor 126
National Nutrition Consortium Publication on Nutrition Labeling 126
Nutrition Education Curriculum for Medical Schools 127
Saving a Child from Xerophthalmia: A Disease of Darkness 127
New Course 127
Recent Books 127

NO. 5, MAY 1976

Iron and Immunocompetence, by R. K. Chandra 129
Bile Acid Tolerance Test and Its Use in Hepatic Disease 133
Hypertonic Elemental Feeding of Very Premature Infants and Necrotizing Enterocolitis 135
Immune Response of Premature Infants to Albumin 138
Paul György: "Reminiscences on the Discovery and Significance of Some of the B Vitamins" 141
Insulin Receptors, Insulin Resistance, Diabetes and Obesity 145
Origin and Function of Human Plasma R-Type Vitamin B_{12} Binding Proteins 148
Diet and Hyperactivity: Any Connection? 151
Paul György — An Appreciation 159
Letter to the Editor 160

NO. 6, JUNE 1976

A Review of the Biological Function of Taurine, by K. C. Hayes 161
Possible Aluminum Intoxication 166
Coffee Drinking and Peptic Ulcer Disease 167
The Influence of Maternal Food Supplements on Birthweight in Guatemala 169
β-Sitosterolemia and Xanthomatosis 172
Protein Sparing Produced by Proteins and Amino Acids 174
Treatment of Massive Obesity: Rice/Reduction Diet 176
D. Keilin and T. Mann: "Carbonic Anhydrase" 179
Ascorbic Acid and Catecholamines 181
The Functional Significance of Vitamin K Action 182
Effect of Protein Restricted Diet on Immune Functions, Autoimmune Disease and Life Span in NZB Mice 184
Effects of Dexamethasone on Glucose Metabolism 185

Vitamin B_6 Deficiency and Immune Responses 188
Letter to the Editor 190
Meeting Announcement 190
Recent Books 190

NO. 7, JULY 1976

Food Science and Technology: Past, Present, Future, W. O. Atwater Memorial Lecture, by Emil M. Mrak 193
A New Complication of Jejunoileal Bypass: Colonic Pseudo-Obstruction 201
Mucocutaneous Fungal Lesions and Iron Deficiency 203
Intervention in Type IV Hyperlipoproteinemia 204
Nutritional Status in Nonalcoholic Chronic Liver Disease 207
Lymphocyte Number and Function in Protein Malnutrition 208
Immunologic Mechanisms in Cystic Fibrosis 210
W. G. MacCallum and C. Voegtlin: "On the Relation of the Parathyroid to Calcium Metabolism and the Nature of Tetany" 212
Factors Influencing the Size, Composition and Metabolism of Very Low Density Lipoproteins in the Rat 214
A Role for Biotin in Fatty Liver and Kidney Syndrome in Chicks 217
Prevention of Coronary Heart Disease 220
Letters to the Editor 223
Recent Books 224

NO. 8, AUGUST 1976

Sodium and Potassium, by George R. Meneely and Harold D. Battarbee 225
Vitamin C Toxicity 236
Malnutrition and Drug Metabolism in Man 237
Beatrice J. Geiger, Harry Steenbock and Helen T. Parsons: "Lathyrism in the Rat" 240
Dietary Essential Fatty Acids, Prostaglandin Formation and Platelet Aggregation 243
Influence of Protein Restriction on Immune Response to Alloantigens and Homograft Rejection 246
Commentary on Breast-Feeding and Infant Formulas, Including Proposed Standards for Formulas ... 248

NO. 9, SEPTEMBER 1976

Corn Malnutrition, Brain Serotonin and Behavior, by John D. Fernstrom and Loy D. Lytle 257
Protein Quality of High Protein Wheats for Young Children 263
Pernicious Anemia and Mental Dysfunction 264
Genetics and Environment in the Pathogenesis of Nutritional Rickets 266
Fever and Amino Acid Metabolism 267
Cultural Practices and Anemia in Nigeria 269
Intestinal Malabsorption of Iron 270
Maternal Leukocyte Enzymes in Human Fetal Malnutrition 272
W. H. Sebrell and R. E. Butler: "Riboflavin Deficiency in Man" 275
Ascorbate Supplements in Vitamin A Deficiency 278
Insulin and Glucose Intolerance in Malnourished Rats 280
Feeding, Enzymes, Carriers and Transport 282
Protein Inhibitor of Kidney Hydroxyvitamin D_3-1-Hydroxylase 284
Archival Materials Concerning E. V. McCollum 287
Recent Books 288

NO. 10, OCTOBER 1976

Amino Acid Metabolism, by Harry P. Broquist 289
Relation of Zinc to Calcium in Bone 294
Cell-Mediated Immune Response in Celiac Disease 295
Physical Acceptability and Bioavailability of Iron Fortified Food 298
Ethanol and Angina Pectoris 300
The Lactose Intolerance Test and Milk Consumption 302
Serum Ferritin and Early Hemochromatosis 304
William C. Rose: "Amino Acid Requirements of Man" 307
The Validity of 24-Hour Dietary Recalls 310
Toxic Effects of Fluoride in Enamel Formation 311
Interaction Between Vitamin K_1 and Fat Absorption 314
Soil Fertility and the Nutritive Value of Crops 316
Western Hemisphere Nutrition Congress V 318
Letter to the Editor 319
Recent Books 320

NO. 11, NOVEMBER 1976

Recommendations for the Prevention of Lead Poisoning in Children, by Committee on Toxicology, Assembly of Life Sciences, National Research Council 321
Gilbert's Syndrome: Diet and Starvation 328
Organic Cause of Hypoglycemia-Insulinoma 330
Is the Basic Lesion in Diabetes Insulin Deficiency or Insulin Resistance? 332
Improved Treatment of Hypertension After Physician Tutorials 334
Edward Mellanby: "An Experimental Investigation on Rickets" 338
Amniotic Fluid Protein: A Nutritional Function 341
Adaptive Responses of Amino Acid Degrading Enzymes to Variation of Amino Acid Protein Intake 343
Stimulus for Hyperplasia of the Small Bowel 345
Selenium and Human Health 347
The Unripe Akee—Forbidden Fruit 349
Letter to the Editor 351
Directory of Preschool Nutrition Intervention Programs 352

NO. 12, DECEMBER 1976

Chronology of Some Events in the Development and Application of the Science of Nutrition, by E. Neige Todhunter 353
Author Index 368
Subject Index 381